



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

RECEIVED

AUG 04 2009

Director's Office  
Department of Conservation

Mr. Jason Marshall  
Acting State Oil and Gas Supervisor  
Department of Conservation  
Division of Oil, Gas, and Geothermal Resources (DOGGR)  
801 K Street, MS 20-20  
Sacramento, California 95814

**RE: Aquifer Exemption Application - Portion of Upper Tulare Formation  
Asphalto Oil Field, McKittrick Area, Kern County**

Dear Mr. Marshall,

EPA has reviewed the Division of Oil, Gas, and Geothermal Resources (DOGGR) June 22, 2009 proposal to designate a portion of the Tulare formation as an exempted aquifer, pursuant to a request from Occidental of Elk Hills, Inc. Occidental operates an existing Class II Underground Injection Control (UIC) project in the Lower Tulare zone of the Asphalto Oil Field and proposes to expand UIC water disposal to include the Upper Tulare. Based on the information you provided, EPA approves the proposed aquifer exemption, as described below.

In compliance with provisions of the Safe Drinking Water Act, as amended, (42 USC 300f-300j-9, commonly known as the SDWA) and attendant regulations incorporated by the U.S. Environmental Protection Agency under Title 40 of the Code of Federal Regulations (CFR), EPA hereby approves an exemption of the aquifer located within the following administrative boundaries of the Asphalto Field:

Portion of the E/2 E/2 E/2 of Section 21, T30S/R22E  
SE/4 and portions of S/2 NE/4, S/2 NW/4, and SW/4 of Section 22, T30S/R22E  
Portion of S/2 of Section 23, T30S/R22E  
NW/4 and S/2 of Section 25, T30S/R22E  
N/2, SE/4, and portion of NE/4 SW/4 of Section 26, T30S/R22E  
Portions of NW/4 and NE/4 of Section 27, T30S/R22E  
N/2 NW/4 and E/2 of Section 36, T30S/R22E  
N/2 and SW/4 of Section 31, T30S/R23E  
NE/4 of Section 1, T31S/R22E  
NW/4 of Section 6, T31S/R23E

The aquifer being exempted is the portion of the Upper Tulare formation that is found below the overlying, confining Basal Alluvial Clay layer. The Basal Alluvial Clay layer divides the unconfined Upper Tulare Air sands from the confined Upper Tulare Saturated sands. The average depth of the exempted aquifer is approximately 380 ft below ground surface (below the base of the Basal Alluvial Clay) to the point where its salinity exceeds 10,000 ppm TDS, or approximately 780 ft below ground surface.


EPA finds that the portion of the Tulare Aquifer delineated above meets the exemption criteria in 40 CFR § 146.4(a) and (c):

- a) It does not currently serve as a source of drinking water, and
- c) The total dissolved solids (TDS) content of the groundwater is more than 3,000 and less than 10,000 milligrams/liter (mg/l) and it is not reasonably expected to supply a public water system.

EPA concurs with DOGGR's commitment to restrict Class II injection to zones below the confining alluvial clay in the Tulare formation, as described in DOGGR's response to comments from the California Regional Water Quality Control Board – Central Valley Region, and in the proposed application submitted to EPA.

With this approval, the California UIC Class II Primacy program is hereby revised to reflect this additional exempted aquifer.

Signed this 31<sup>st</sup> day of July, 2009.

  
Alexis Strauss  
Director, Water Division

cc: Shelton R. Gray, Ca. Central Valley Regional Water Quality Control Board,  
Senior Engineering Geologist  
Michael Stettner, Ca. DOGGR UIC Program Manager, Sacramento  
Randy Adams, Ca. DOGGR District 4, Deputy Supervisor  
Burt Ellison, Ca. DOGGR District 4, Associate O&G Engineer